



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,855	10/10/2001	Yoshiaki Sugizaki	04329.2686	5564
22852 7590 05/31/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER IM, JUNGHWA M	
			ART UNIT 2811	PAPER NUMBER
			MAIL DATE 05/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/972,855

Applicant(s)

SUGIZAKI, YOSHIAKI

Examiner

Junghwa M. Im

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on ARCH 2, 2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gurtler (US 5424245) in view of Bertin et al. (US 5977640), hereinafter Bertin, Matushima (US 6384485) and Yanagida (US 7078820).

Regarding claim 25, Fig. 1 of Gurtler shows a semiconductor device comprising:

a first semiconductor chip (21) where a semiconductor element (22, 24, 32, 34) is formed;

a plurality of first connecting terminals (20) arranged on a semiconductor element formation surface side in the first semiconductor chip and connected electrically to the

Art Unit: 2811

semiconductor element, the first connecting terminal having substantially the same configuration;

a plurality of conductive members (28) buried in a plurality of through holes that go through the first semiconductor chip;

a plurality of second connecting terminals (36) on a back surface side of the semiconductor element formation surface side in the first semiconductor chip, and connected electrically to the semiconductor element via the conductive member,

a second semiconductor chip (10) stacked on the first semiconductor chip (21);

a plurality of the third connecting terminals (18) on a semiconductor element formation surface side (14, 16) in the second semiconductor chip,

wherein one of the first connecting terminals and the second connecting terminals of the first semiconductor chip is arranged at a position facing the third connecting terminals of the second semiconductor chip,

the first semiconductor chip and the second semiconductor chip are electrically connected with each other through the facing connecting terminals, and

some (48, 50) of the first connecting terminals or the second connecting terminals are distributed and arranged substantially on an entire surface of the semiconductor chip to receive a power source supply potential or ground potential.

Gurtler shows the most aspect of the instant invention except having a larger second semiconductor chip and a heat radiating plate thereon. Fig. 7 of Bertin shows a multi-chip packaging device wherein the second semiconductor chip (30) is larger than the first semiconductor chip (40) and a heat radiating plate (74) thereon.

Art Unit: 2811

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Bertin to the device of Gurtler in order to have the second semiconductor chip larger than the first semiconductor chip for a compact package and a heat radiating plate thereon for the heat dissipation of the package.

The combined teachings of Gurtler and Bertin fail to show that the heat radiating plate is affixed by a radiating resin. Fig. 1 of Matsushima shows a heat radiating plate (107) is attached by radiating resin (108; col. 1, lines 26-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Matsushima to the device of Gurtler and Bertin in order to have the heat radiating plate attached by radiating resin to improve the efficiency of the heat dissipation.

The combination of Gurtler/Bertin/Matsushima fails to show that "an interlayer insulation film and a surface protection film coated on the semiconductor element formation surface side." Fig. 1 of Yanagida shows an interlayer insulation film (117) and a surface protection film (113, 115) coated on the semiconductor element formation surface side.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Yanadiga to the device of Gurtler/Bertin/Matsushima in order to have an interlayer insulation film and a surface protection film coated on the semiconductor element formation surface side to protect the device layer.

Response to Arguments

Art Unit: 2811

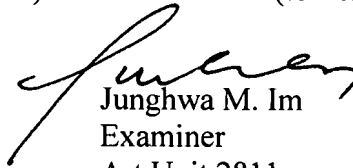
Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Junghwa M. Im
Examiner
Art Unit 2811

jmi